



# **Resources, Technology, and Agricultural Productivity in a Changing World**

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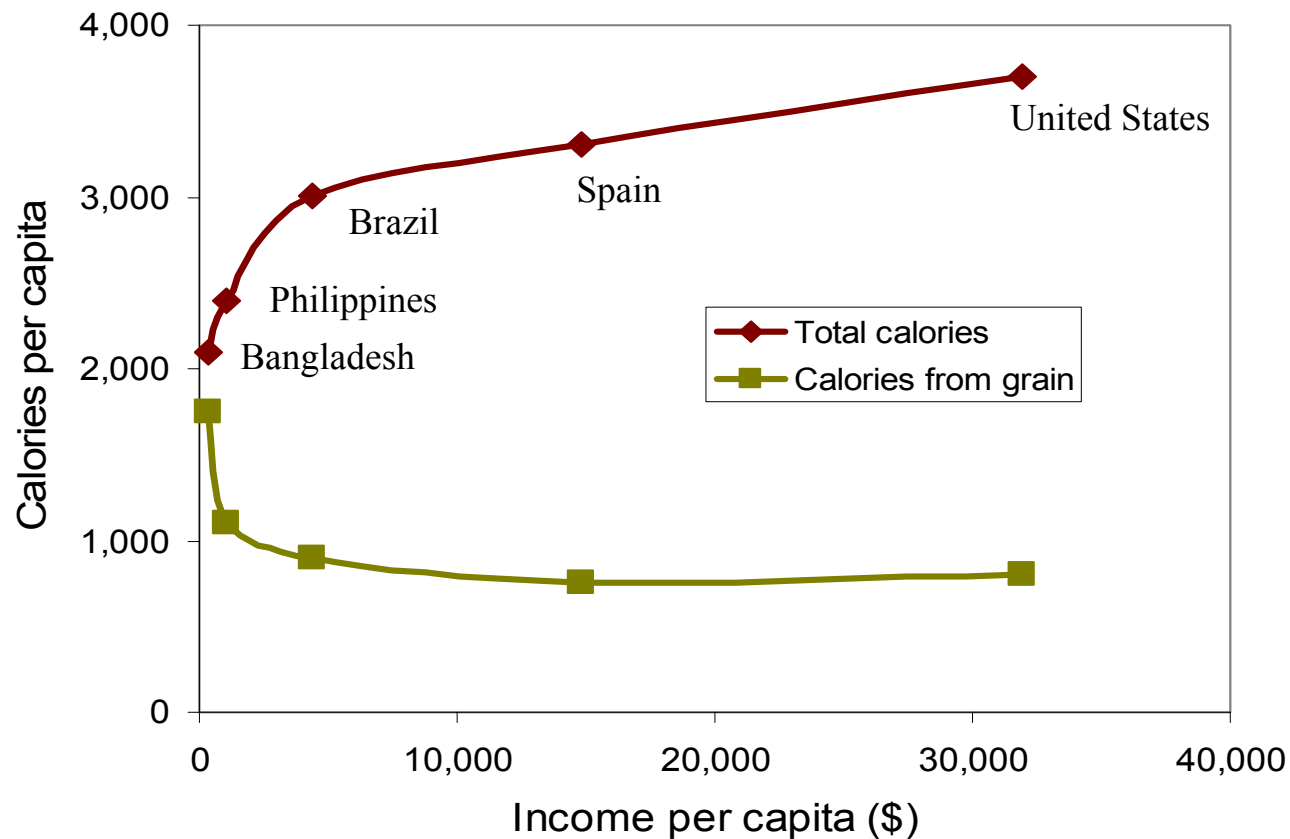
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# Context



- Mature food markets in developed countries
- Rising food demand in developing countries
  - population growth
  - income growth
  - urbanization
- Gains from trade with, and investment in, developing countries

# Income and consumption



Source: Economic Research Service, USDA

# Sources of productivity growth



- Investment in resources, technology, and market access
- IFPRI finds that investment in international agricultural R&D
  - increases agricultural imports by developing countries (by increasing incomes)
  - contributes to high-performance crop varieties planted in developed countries



# Resources



- Private incentives  $\neq$  public incentives
- Short-run incentives  $\neq$  long-run incentives
- Incomplete markets and inappropriate policies can result in unsustainable use of
  - cropland and rangeland
  - water resources
  - forests
  - fisheries

# Technology



- Domestic and foreign investors face risks associated with insecure property rights (including intellectual property).
- Private investors face limited demand from developing country farmers.
- Questions about technology transfer from developed countries to developing, or from favored environments to marginal areas.

# Market access and information



- Markets may be impeded by high transactions costs and poor infrastructure.
- Prior trade agreements and domestic support programs in developed countries can limit developing countries' access to international markets.
- Developing countries are sensitive to price instability because they tend to be highly dependent on only a few commodities.

# Conclusions



- Significant challenges remain...
- ...but also considerable (and mutual) benefits from measures that improve productivity and market performance in both developed and developing countries